



Operating Guide

EPIA-M700 Mainboard

Table of Contents

Table of Contents.....	i
VIA EPIA-M700 Overview	1
VIA EPIA-M700 Layout.....	2
VIA EPIA-M700 Specifications	3
VIA EPIA-M700 Processor SKUs	4
VIA VX800 Chipset Overview	5
VIA EPIA-M700 Dimensions	6
VIA EPIA-M700 Height Distribution	7
VIA EPIA-M700 Side Profile	8
Power Consumption	9
VIA EPIA-M700-15	9
A. Playing DVD – Power DVD 7.0	9
B. Playing MP3 – Media Player	9
C. Running Network Application (LAN1) – Files Copy.....	9
D. Running Network Application (LAN2) – Files Copy	9
E. Idle	10
F. Running C.C. Winstone 2004	10
G. S3 mode	10
VIA EPIA-M700-10E.....	11
A. Playing DVD – Power DVD 7.0	11
B. Playing MP3 – Media Player	11
C. Running Network Application (LAN1) – Files Copy.....	11
D. Running Network Application (LAN2) – Files Copy	11
E. Idle	11
F. Running C.C. Winstone 2004	12
G. S3 mode	12
Power Specifications.....	13
VIA EPIA-M700 Microsoft and Linux Driver Support.....	14
Microsoft Driver Support	14
Linux Driver Support	14
Contact	15

VIA EPIA-M700 Overview

The VIA EPIA-M700 Mini-ITX Mainboard is a compact native x86 mainboard optimized for entry level systems in embedded and productivity applications. The mainboard is based on the VIA VX800 Unified Digital Media IGP chipset featuring the VIA Chrome9™ HC3 with 2D/3D graphics and video accelerators for rich digital media performance.

The VIA EPIA-M700 includes a choice of VIA C7® NanoBGA2 processor speeds. The VIA C7® NanoBGA2 processor is powerful, secure, and efficient. It includes the VIA Padlock Security Engine, VIA CoolStream™ Architecture, VIA StepAhead™ Technology Suite, and VIA TwinTurbo™ technology.

The VIA EPIA-M700 supports up to 2 GB of 667/533 MHz DDR2 memory. The VIA EPIA-M700 provides support for high fidelity audio with its included VIA VT1708B High Definition Audio codec. In addition it supports two SATA (3.0 Gbps) storage device.

The VIA EPIA-M700 is compatible with a full range of Mini-ITX chassis as well as FlexATX and MicroATX enclosures and power supplies. The VIA EPIA-M700 is fully compatible with Microsoft® and Linux operating systems.

VIA EPIA-M700 Layout

EPIA-M700 Mainboard

(Dimension 17 cm x 17 cm)

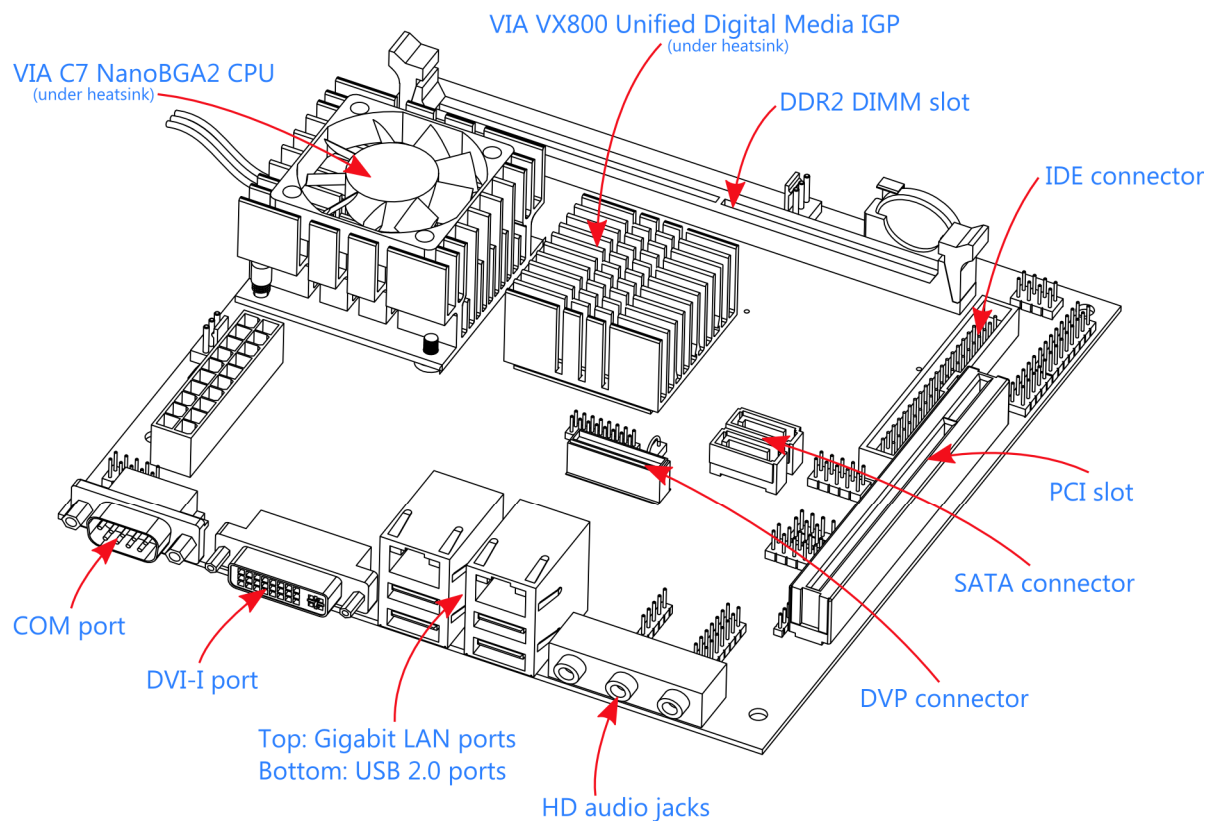


Figure 1: EPIA-M700 layout

VIA EPIA-M700 Specifications

Model Name	- EPIA-M700-15	- EPIA-M700-10E
Processor	- VIA C7® 1.5 GHz NanoBGA2 processor (400 MHz FSB)	- VIA C7® 1.0 GHz NanoBGA2 processor (400 MHz FSB) with fanless heatsink
Chipset	- VIA VX800 Unified Digital Media IGP Chipset	
System Memory	- 1 x DDR2 533/667 SODIMM slot - Up to 2 GB memory size	
VGA	- Integrated VIA Chrome9™ HC3 DX9 3D/2D Graphics and unified video decoding acceleration	
Onboard IDE	- 1 x UltraDMA 133/100/66/33 pin connector	
Onboard LAN	- 2 x VIA VT6130 PCIe Gigabit LAN controller	
Onboard Audio	- VIA VT1708B High Definition Audio Codec	
Onboard I/O Connectors	- 1 x USB pin header for two additional USB 2.0 ports - 1 x Front-panel audio pin header for headphone-out/MIC-in or amplifier module - 1 x S/PDIF out connector - 1 x Digital video input pin header for CCIR-656/601/transport stream video - 1 x Digital video output pin header for HDMI transmitter, DVI transmitter (different add-on card is required for different function) or 18-bit TTL (when onboard DVI is disabled) - 1 x CF Type I connector (shared with IDE) - 2 x SATA connectors - 1 x MFX pin header - 1 x SPI pin header - 1 x Digital I/O pin header - 1 x KB/MS pin header - 1 x SIR pin header - 1 x Serial port pin header - 1 x System temperature reading pin header - 1 x ATX power connector - 2 x Fan connectors for CPU and system fans	
Expansion Slot	- 1 x PCI slot	
Back Panel I/O	- 1 x Serial port - 1 x DVI-I port - 2 x RJ-45 LAN ports - 4 x USB 2.0 ports - 3 x Audio jacks for Line-out, Line-in, and MIC-in	
BIOS	- Award BIOS - SPI 4/8 Mbit flash memory	
Operating System	Windows XP, Linux, WinCE, XPe	
System Monitoring & Management	- CPU voltage monitoring - Wake-on-LAN, Keyboard power-on, RTC Timer power-on, Watch Dog Timer - Fan speed detection - System power management and temperature monitoring - AC Power failure recovery	
Operating Temperature	0°C ~ 50°C	
Operating Humidity	0% ~ 95% (relative humidity; non-condensing)	
Form Factor	- Mini-ITX (6-layer) - 17 cm x 17 cm	

Note: This specification is subject to change without prior notice.

VIA EPIA-M700 Processor SKUs

The VIA EPIA-M700 is available in two speed grades as follows:

- 1.5 GHz VIA C7[®] NanoBGA2 Processor
- 1.0 GHz VIA C7[®] NanoBGA2 Processor

VIA VX800 Chipset Overview

The VIA VX800 Unified Digital Media Chipset is designed to enable high quality digital video streaming and DVD playback in a new generation of fanless, small form factor PCs and IA devices. The VIA VX800 features VIA Chrome9™ HC3 with 2D/3D graphics and video acceleration, DDR2 667/533 MHz support, motion compensation and dual display support to ensure a rich overall entertainment experience. Outstanding connectivity features include USB 2.0, 10/100 LAN, SATA (3.0 Gbps), and ATA/133.

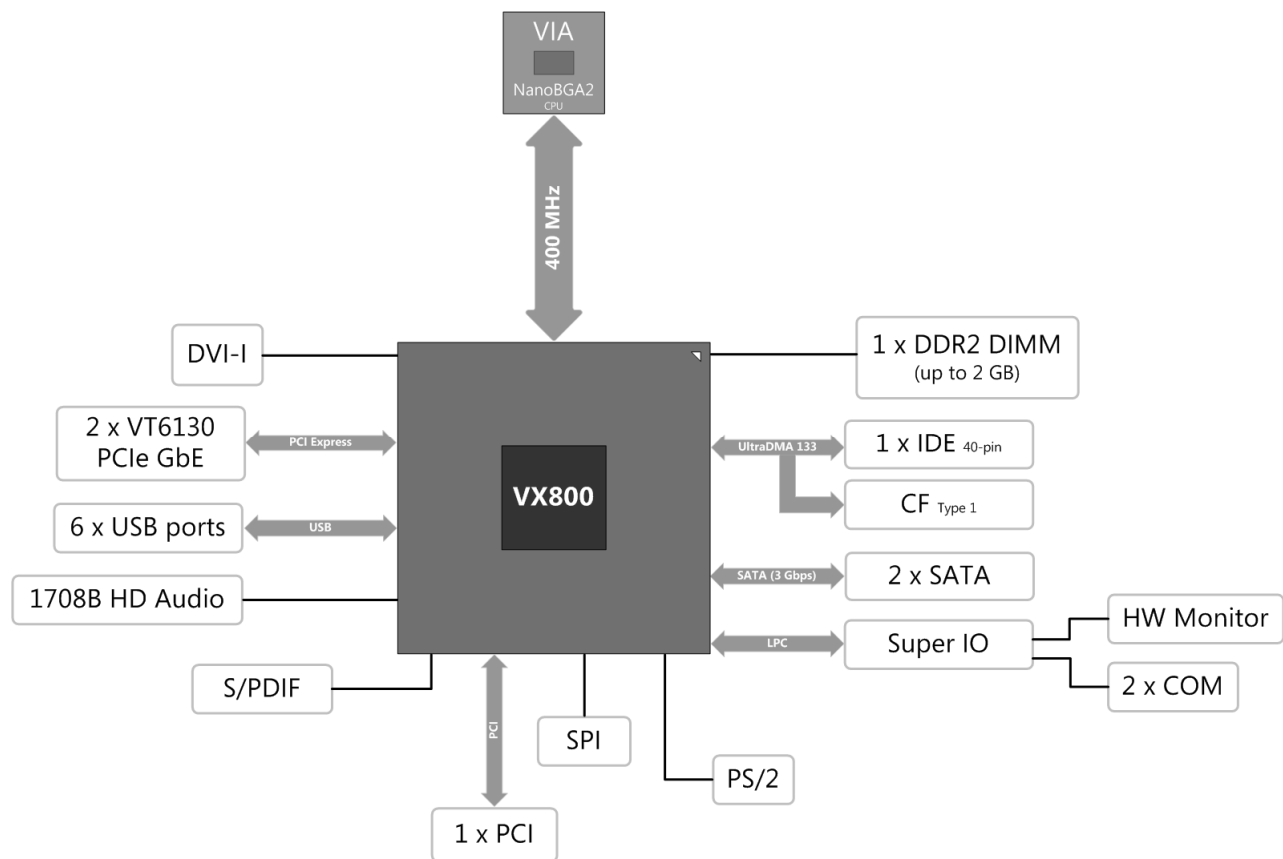


Figure 2: VX800 as implemented in EPIA-M700

VIA EPIA-M700 Dimensions

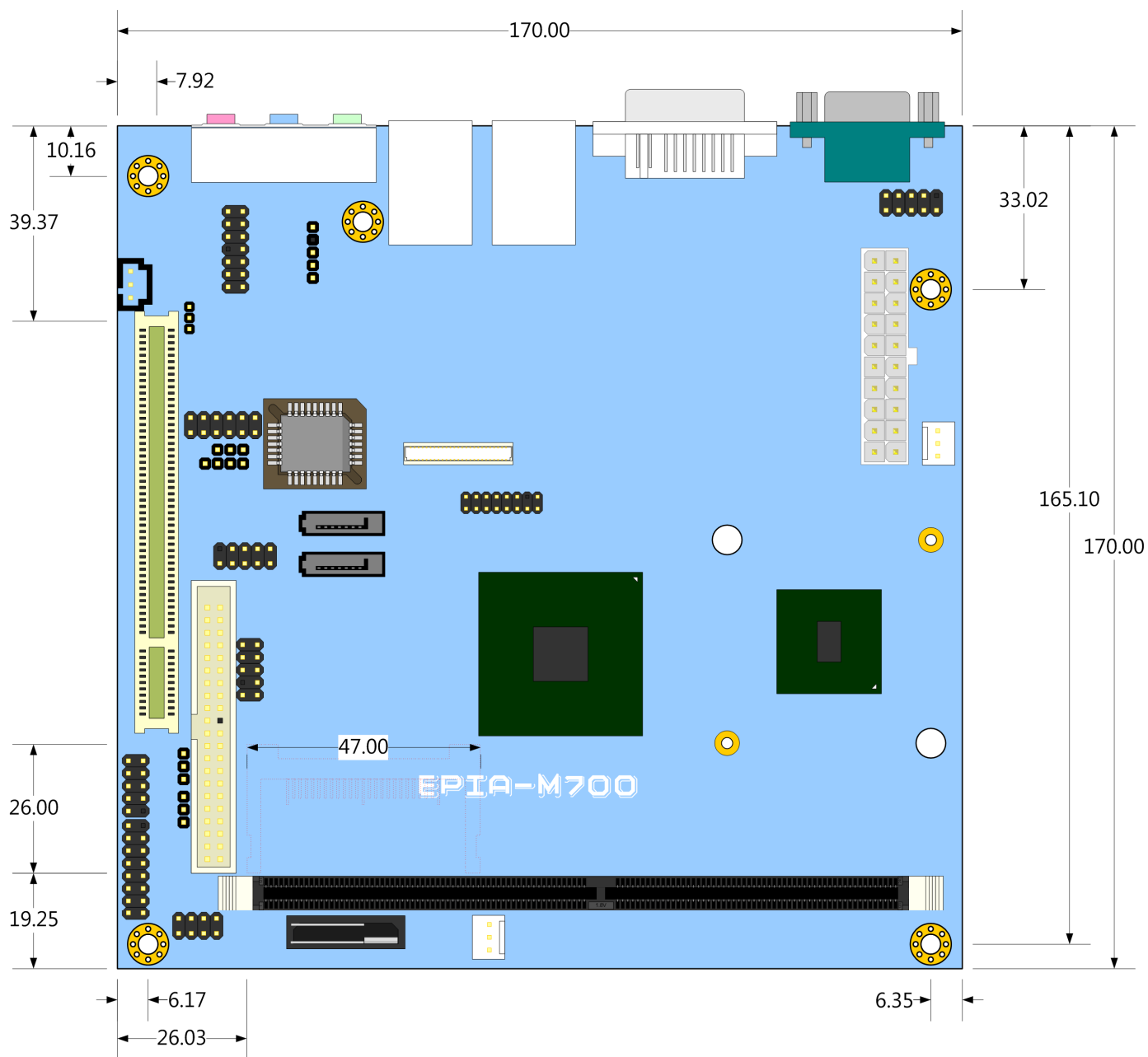
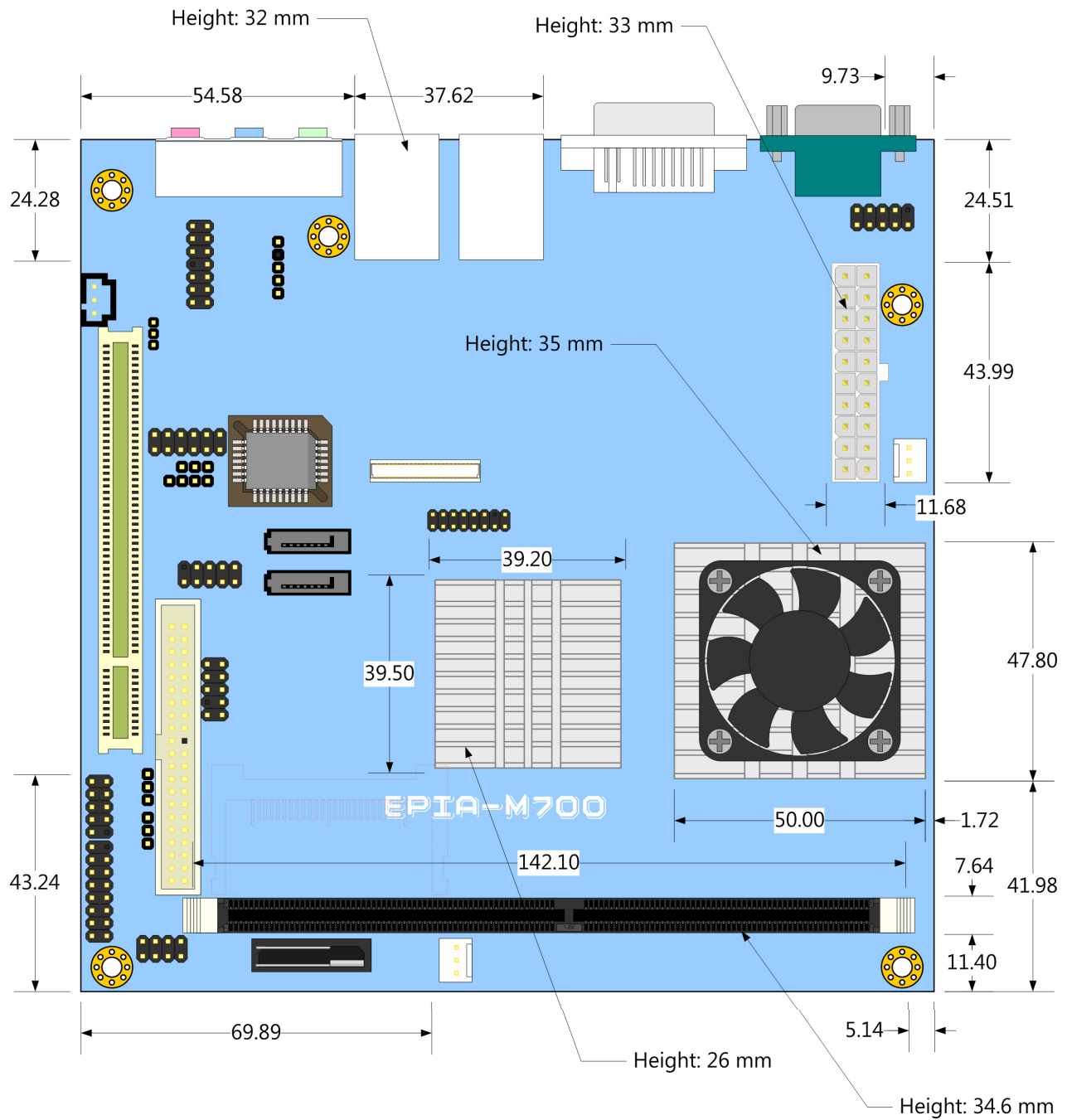


Figure 3: EPIA-M700 mounting layout and dimensions

VIA EPIA-M700 Height Distribution



Top side: all other height is under 21 mm
 Bottom side: CF connector height 5.8 mm

Figure 4: EPIA-M700 height distribution

VIA EPIA-M700 Side Profile

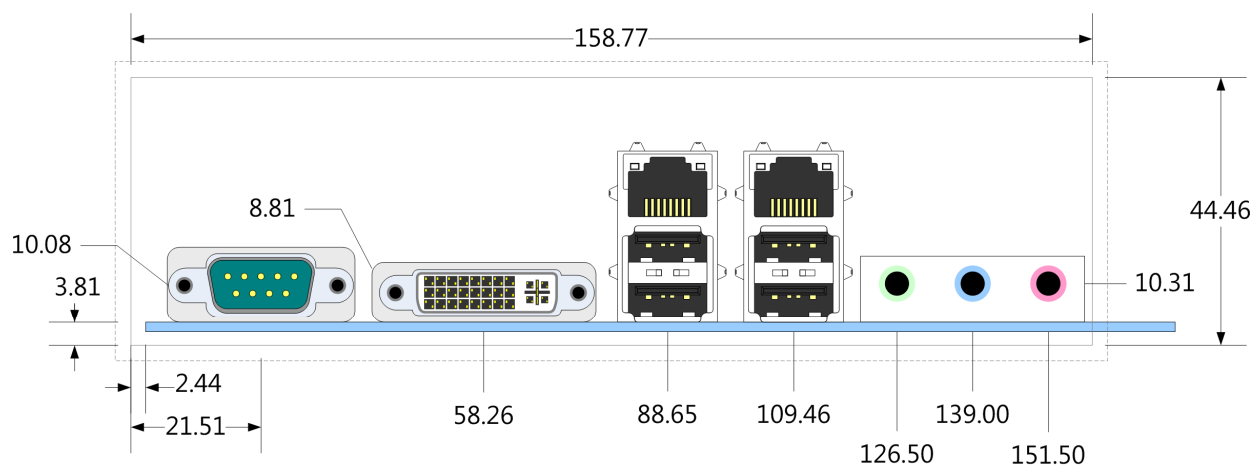


Figure 5:EPIA-M700 back panel ports

Power Consumption

Power consumption tests were performed on the VIA EPIA-M700 for both processor options. The following tables are a comprehensive breakdown of the voltage, amp and wattage values while running common system applications.

VIA EPIA-M700-15

A. Playing DVD – Power DVD 7.0

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.312	1.009	3.342
Main Board +5V	4.979	2.349	11.696
Main Board 5VSB	5.100	0.163	0.831
Main Board +12V	11.983	0.089	1.066
Total Power Consumption			16.935

B. Playing MP3 – Media Player

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.320	1.009	3.350
Main Board +5V	4.984	2.356	11.742
Main Board 5VSB	5.107	0.189	0.965
Main Board +12V	11.992	0.084	1.007
Total Power Consumption			17.064

C. Running Network Application (LAN1) – Files Copy

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.324	1.025	3.407
Main Board +5V	4.993	2.029	10.131
Main Board 5VSB	5.112	0.135	0.690
Main Board +12V	11.986	0.084	1.007
Total Power Consumption			15.235

D. Running Network Application (LAN2) – Files Copy

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.325	1.045	3.475
Main Board +5V	4.995	1.950	9.740
Main Board 5VSB	5.114	0.136	0.696
Main Board +12V	11.986	0.085	1.019
Total Power Consumption			14.930

E. Idle

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.330	1.047	3.487
Main Board +5V	5.005	1.678	8.398
Main Board 5VSB	5.119	0.137	0.701
Main Board +12V	11.982	0.089	1.066
Total Power Consumption			13.652

F. Running C.C. Winstone 2004

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.318	0.995	3.301
Main Board +5V	4.977	2.740	13.637
Main Board 5VSB	5.107	0.133	0.679
Main Board +12V	11.999	0.083	0.996
Total Power Consumption			18.613

G. S3 mode

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	0.002	0.000	0.000
Main Board +5V	0.004	0.000	0.000
Main Board 5VSB	5.152	0.488	2.514
Main Board +12V	0.000	0.000	0.000
Total Power Consumption			2.514

VIA EPIA-M700-10E

A. Playing DVD – Power DVD 7.0

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.278	0.835	2.737
Main Board +5V	4.932	2.782	13.721
Main Board 5VSB	5.067	0.159	0.806
Main Board +12V	11.967	0.080	0.957
Total Power Consumption			18.221

B. Playing MP3 – Media Player

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.301	0.862	2.845
Main Board +5V	4.961	2.300	11.410
Main Board 5VSB	5.089	0.160	0.814
Main Board +12V	11.979	0.079	0.946
Total Power Consumption			16.015

C. Running Network Application (LAN1) – Files Copy

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.305	0.884	2.922
Main Board +5V	4.969	2.143	10.649
Main Board 5VSB	5.095	0.134	0.683
Main Board +12V	11.981	0.077	0.923
Total Power Consumption			15.177

D. Running Network Application (LAN2) – Files Copy

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.304	0.896	2.960
Main Board +5V	4.966	2.211	10.980
Main Board 5VSB	5.093	0.134	0.682
Main Board +12V	11.981	0.077	0.923
Total Power Consumption			15.545

E. Idle

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.310	0.893	2.956
Main Board +5V	4.980	1.781	8.869
Main Board 5VSB	5.099	0.137	0.699
Main Board +12V	11.976	0.086	1.030
Total Power Consumption			13.554

F. Running C.C. Winstone 2004

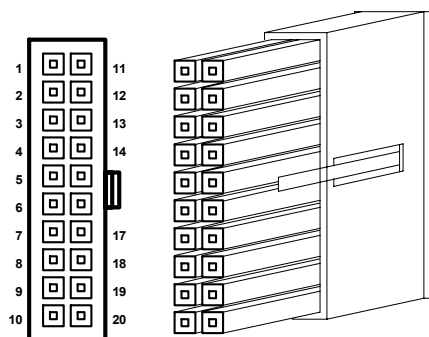
	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	3.300	0.849	2.802
Main Board +5V	4.957	2.537	12.576
Main Board 5VSB	5.089	0.133	0.677
Main Board +12V	11.985	0.076	0.911
Total Power Consumption			16.966

G. S3 mode

	Measured Voltage	Measure Amp	Watts
Main Board +3.3V	0.001	0.000	0.000
Main Board +5V	0.002	0.000	0.000
Main Board 5VSB	5.150	0.492	2.534
Main Board +12V	0.000	0.000	0.000
Total Power Consumption			2.534

Power Specifications

The VIA EPIA-M700 mainboard utilizes an industry standard 20-pin ATX power connector for connecting to the power supply. Due to its ultra low power requirements, a 90 – 120 Watt ATX power supply is ample for even the heaviest of multimedia system applications.



Pin	Signal	Pin	Signal
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	Gnd	13	Gnd
4	+5V	14	PS_ON
5	Gnd	15	Gnd
6	+5V	16	Gnd
7	Gnd	17	Gnd
8	PW_OK	18	-5V
9	+5V_SB	19	+5V
10	+12V	20	+5V

VIA EPIA-M700 Microsoft and Linux Driver Support

MICROSOFT DRIVER SUPPORT

The VIA EPIA-M700 mainboard is compatible with Microsoft operating systems. The latest Windows 2000 and Windows XP drivers can be downloaded from the VEPD website at www.viaembedded.com.

For embedded operating systems (Windows CE.NET and Windows XP Embedded), the related drivers can be found in the VIA Arena website at www.viaarena.com.

LINUX DRIVER SUPPORT

The VIA EPIA-M700 mainboard is highly compatible with many Linux distributions.

Support and drivers are provided through various methods including:

- Drivers provided by VIA
- Using a driver built into a distribution package
- Visiting VIA Arena website at www.viaarena.com for latest updates on a monthly basis
- Installing a third party driver (such as the ALSA driver from the Advanced Linux Sound Architecture project for integrated audio)

For OEM clients and system integrators developing a product for long term production, other code and resources may also be made available. You can submit a request either through the [Developers portal](#) at VIA Arena, or through your VEPD support contact. Alternatively, VIA can work further towards providing additional drivers to fit your specific needs.

Contact

For more information on the VIA EPIA-M700 Mini-ITX mainboard contact your sales representative or visit our website at www.viaembedded.com

AMERICA

USA

940 Mission Court
Fremont, CA 94539
Tel: (510) 683 3300
Fax: (510) 687 4654
Email: vpsd_sales@viatech.com

ASIA

TAIWAN

1F, No. 531, Chung Cheng Road
Hsin Tien, Taipei
Tel: (02) 2218 5452
Fax: (02) 2218 5453
Email: mkt@via.com.tw

CHINA

6F, DAscom Tower
9 Shangdi East Road
Haidian District
Beijing, 100085
Tel: 10 6296 3088
Fax: 10 6297 2929
Email: vpsdbj@viatech.com.cn

EUROPE

GERMANY

Mottmann Strasse 12
53842 Troisdorf-Oberlar
Tel: 2241 397780
Fax: 2241 3977819
Email: sales@via-tech.de

